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1     sleeve. I call it a sleeve or a wrapper that we  
2     see in the photo on Exhibit 6. So this is a  
3     picture of what you showed us when we arrived.

4           A. Yes.

5           Q. And, I don't know, maybe it was a couple  
6     weeks after the fire, something like that.

7           A. Yes.

8           Q. Why was this lamp placed in a box for us  
9     and other people to see after the fire?

10          A. Just for record.

11          Q. For a record of information about the lamps  
12     that were in place in the new fixtures?

13          A. Yes.

14          Q. And you'll see we took pictures, I believe,  
15     of all of the printing that was on the sleeve. But  
16     the part that I'm really interested in asking about  
17     is on the last page. And this particular lamp that  
18     you showed us, this is one that was already in your  
19     stock; is that true? In your storage room as a  
20     stair lamp?

21          A. Can you ask that question again?

22          Q. Well the sleeve that's in this picture,  
23     assuming this is one that was in the box the day me  
24     and the photographer came to look at them, is this  
25     a sleeve that was in your stock before the fire, as

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1 opposed to, did you go out and buy it in order to  
2 get a sample after the fire?

3 A. I can't remember.

4 Q. Who put the sleeve in the box; do you know?

5 Was that something you did or did somebody else?

6 A. I didn't do it. I can't remember exactly.

7 Q. Okay. If you would look at the last page,  
8 the fourth page of this Exhibit 6, do you see there  
9 is a list of warnings on there?

10 A. Yes.

11 Q. Do you see about halfway down it says, an  
12 unexpected lamp rupture may cause injury, fire or  
13 property damage?

14 A. Yes.

15 Q. And then there is a whole list of  
16 recommendations about the lamp; correct?

17 A. Yes.

18 Q. One of which says, use an enclosed fixture  
19 rated for this product, see instructions. Do you  
20 see that?

21 A. Yes.

22 Q. Do you agree that the use of this  
23 particular lamp in an open fixture would be  
24 inconsistent with that warning?

25 A. I see that statement?

**"CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

"Caution is permitted for property-damage-only accidents."

It further defines:

"Safety alert symbol. It is composed of an equilateral triangle surrounding an exclamation point."

Clarity of the message requires efficient organization and adherence to the standard for providing knowledge of the hazard, its seriousness, what to do about it, and the consequences if one doesn't obey.

#### Evaluation of the GE Lamp Sleeve Hazard Label and Instructions

The following is the content of the lamp's packaging sleeve. This is the content that appeared on the sleeve of a spare lamp that was in Metso Paper's stock after the incident. (<!> represents the safety alert symbol).

#### **<!> Warning**

##### **Risk of electric shock.**

- Turn power off before inspection, installation or removal
- Do not use where directly exposed to water or outdoors without an enclosed fixture.

##### **Risk of fire.**

- Keep combustible materials away from lamp.
- Use in fixture rated for this product.

##### **A damaged lamp emits UV radiation which may cause eye/skin injury.**

- Turn power off if glass bulb is broken. Remove and dispose of lamp.

##### **Unexpected lamp rupture may cause injury, fire, or property damage.**

- Do not exceed rated voltage.
- Do not use where directly exposed to water or outdoors without an enclosed fixture.
- Use in enclosed fixture rated for this product – see instructions.
- Do not use if outer glass is scratched or broken.
- Use only properly rated ballast.
- Operate lamp only in specified position.
- Turn lamp off at least once for 15 minutes per week.
- Do not store flammable materials near/below lamp.
- Do not use beyond rated life.
- If used on a dimming system, see instructions.
- Do not turn on lamp until fully installed.

#### **<!> Caution**

##### **Risk of burn**

- Allow lamp to cool before handling
- Do not turn on lamp until fully installed

##### **Lamp may shatter and cause injury if broken**

- Wear safety glasses and gloves when handling lamp
- Do not use lamp if outer glass is scratched or broken
- Dispose of lamp in a closed container
- Do not use excessive force when installing lamp

#### **LAMP OPERATING CHARACTERISTICS**

This is a discharge lamp and requires some time to restart and come to full brightness after a power interruption.

#### **SPECIFIED OPERATING POSITIONS**

VBU – Base up  $\pm 15^\circ$  / VBD – Base down  $\pm 15^\circ$  /U – Universal

Lamps operated in vertical position (Base up or Base Down),  $\pm 15^\circ$ , can be used in an open fixture.

Lamps burned in any other orientation must be used in "enclosed fixture only".

FOR USE ON DIMMING SYSTEMS

Contact your local GE Lighting sales representative

DISPOSAL

Lamp contains a small amount of mercury – dispose of in accordance with local regulations.

Large quantities of lamps must be disposed of in accordance with the rule of the local authority.

**This lamp certified to comply with FDA radiation performance standards, 21 CFR Subchapter J.**

**WARNING** – This lamp can cause serious skin burn and eye inflammation from short-wave ultraviolet radiation if outer envelope of the lamp is broken or punctured and the arc tube continues to operate.

Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain types of lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available from the General Electric Company.

This information is presented in three languages and wraps around three sides of the packaging sleeve. A sticker on the first side of the warnings is used to identify the specific product and application coding and its appropriate ballast.

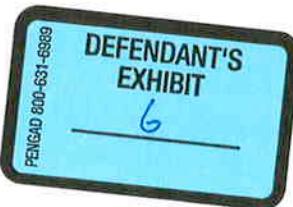
With the sleeve's warnings and instructions as I understand it to have been for the subject lamp, the manufacturer provides incomplete, disorganized, and ambiguous information, and passes off to the end user the responsibility to:

- know that additional information is needed to minimize accidents
- know how to obtain the additional information
- interpret poorly documented information regarding the rated life of the lamp for specific applications and the resulting relationship with re-lamping schedules
- be able to put into practice maintenance and operations rules that are neither obvious nor intuitive in the absence of user instructions (cf. Maghran 20:4-9)

Examining the GE product warning label, it has a crowded appearance along side the French and Spanish versions, and eight statements were repeated with one of those included three times. The statements were distributed among several overlapping categories. Some statements were relegated to a CAUTION section, however it may be that all of those hazards in their worst case could lead to serious injury and should therefore all be classified as a WARNING. A separate warning message regarding a UV exposure hazard was displaced to a separate side of the sleeve along with additional safety-related information. A worker who is simply changing lamps may be dissuaded from carefully reading the entire sleeve by the effort it demands. These objectionable practices are not as critical as the defective content of the instructions and warnings. The instructions fail to provide sufficient information to allow the end user to:

- estimate the average life for the intended application (Varga 69:19-22; 145)
- appreciate the seriousness of a potential explosion and the factors that increase and decrease its likelihood
- establish a re-lamping schedule that is appropriate for the application
- establish demarcation and guarding to prevent entry into a danger zone around the lamp
- know to communicate with a supplier sales or application engineer to receive guidance on the above, if such expertise is not in-house
- Make a decision as to whether the risks posed by this type of lamp warrant its use at all.

As previously stated, an adequate safety hazard label must result from a complete hazard analysis, content development, and follow up testing with typical users before acceptance. It is evident that none of these steps were followed by GE at a time when this new product was under development and was receiving attention in all its other engineering and marketing interests. GE chose to simply take the sleeve for the existing 400 watt metal halide lamp that



## Lámpara Multi-Vapor® de GE

### LAMP OPERATING CHARACTERISTICS

This is a discharge lamp and requires some time to restart and come to full brightness after a power interruption.

#### SPECIFIED OPERATING POSITIONS

VBU - Base up  $\pm 15^\circ$  / VBD - Base down  $\pm 15^\circ$  / U - Universal

Lamps operated in vertical position (Base Up or Base Down),  $\pm 15^\circ$ , can be used in an open fixture. Lamps burned in any other orientation must be used in "enclosed fixtures only".

#### FOR USE ON DIMMING SYSTEMS

Contact your local GE Lighting sales representative

**DISPOSAL.** Lamp contains a small amount of mercury — dispose of in accordance with local regulations.

Large quantities of lamps must be disposed of in accordance with the rules of the local authority.

This lamp certified to comply with FDA radiation performance standards, 21 CFR Subchapter J.

**WARNING** - This lamp can cause serious skin burns and eye inflammation from short-wave ultraviolet radiation if outer envelope of the lamp is broken or punctured and the arc tube continues to operate. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Certain types of lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available from the General Electric Company.

### CARACTÉRISTIQUES DE FONCTIONNEMENT DE LA LAMPE

Cette lampe est une lampe à décharge ; elle demande un peu de temps avant d'atteindre à nouveau et d'atteindre sa pleine luminosité après une interruption de courant.

#### POSITIONS DE FONCTIONNEMENT PRÉSÉNTES

VBU - Culot en haut  $\pm 15^\circ$  / VBD - Culot en bas  $\pm 15^\circ$  / U - Toutes positions

Une lampe fonctionnant en position verticale (culot en haut ou culot en bas)  $\pm 15^\circ$ , peut être utilisée dans un appareil d'éclairage ouvert. Pour toute autre orientation de la lampe, on doit utiliser un appareil d'éclairage fermé.

#### POUR UTILISATION DANS DES Systèmes DE GRADATION

Communiquer avec le représentant GE Éclairage de votre localité.

**MISE AU REBUT** Cette lampe contient une petite quantité de mercure — la jeter conformément à la réglementation locale.

La mise au rebut de grandes quantités de lampes doit être conforme aux

règles établies par l'autorité locale.

Cette lampe est certifiée conforme aux normes de rendement de la FDA concernant les radiations, 21 CFR, sous-chapitre J.

**ATTENTION** - Cette lampe peut causer des brûlures et une inflammation des yeux graves si son enveloppe extérieure est brisée ou éclatée et si le tube à arc continue de fonctionner ; il y a alors émission de rayons ultraviolets.

Ne pas utiliser cette lampe dans des endroits où des personnes pourraient rester pendant plus de quelques minutes, à moins qu'un écran adéquat ne soit installé ou que d'autres mesures de sécurité ne soient prises. Les lampes General Electric comportent les mêmes types de lampes qui s'éteignent automatiquement lorsque leur enveloppe extérieure se brise ou éclate.

### CARACTERÍSTICAS DE FUNCIONAMIENTO

Esta es una lámpara de descarga y tarda en readquirir toda la luminosidad después de un corte de electricidad.

#### POSICIONES ESPECIFICADAS DE FUNCIONAMIENTO

VBU - Base hacia arriba  $\pm 15^\circ$  / VBD - Base hacia abajo  $\pm 15^\circ$  / U - Universal

Las lámparas que funcionan en posición vertical (base hacia arriba o base hacia abajo),  $\pm 15^\circ$ , pueden usarse en un artefacto abierto. Las lámparas que funcionan en cualquier otra posición deben usarse "sólo en artefactos cerrados".

#### PARA USAR CON SISTEMAS REDUCTORES

Entrar en contacto con el representante de ventas local de GE Lighting.

**ELIMINACIÓN DE DESECHOS.** La lámpara contiene una pequeña cantidad de mercurio, los desechos deben eliminarse conforme a las

reglamentaciones locales.

Una gran cantidad de lámparas debe descartarse conforme a las

reglamentaciones de las autoridades locales.

Lámpara certificada para cumplir con las normas de desempeño de FDA

relativas a las radiaciones, 21 CFR Subsección J.

**ADVERTENCIA** - Esta lámpara puede quemar gravemente la piel y producir una seria inflamación de los ojos si se expone a las radiaciones ultravioletas de otra forma si la envoltura está rota o perforada y el tubo de arco sigue funcionando. No usar si la gente debe permanecer cerca más de unos

minutos, a menos que se utilice una protección adecuada o que se tomen otras medidas de precaución. Es posible comprar en General Electric

una tapa para la lámpara que se apaga automáticamente

cuando la envoltura se rompe o se perfora.

